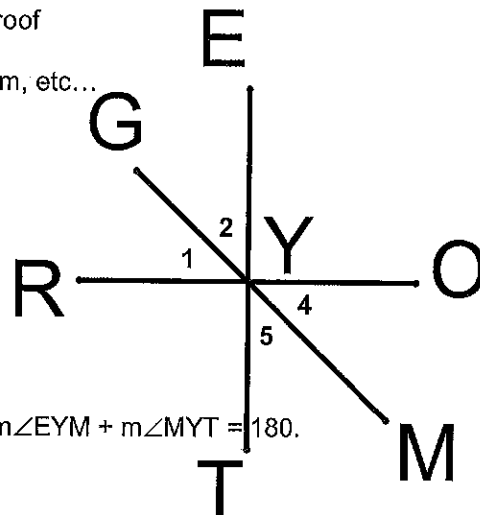


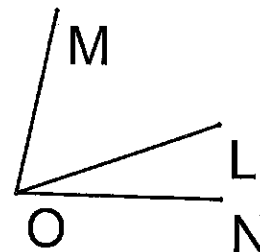
Name KeyDate _____
201 Chapter 2 Justify Statements and Writing Proof

Justify the following statements with a definition, postulate, property, theorem, etc...

1. def of \angle bis \overline{YM} bisects $\angle TYO$, then $m\angle 4 = m\angle 5$.2. SAP $RY + YO = RO$ 3. def of rt. \angle If $\angle RYE$ is a right angle, then $m\angle RYE = 90^\circ$.4. def of \perp line If $\overline{RO} \perp \overline{ET}$, then $\angle EYO$ is a right angle.5. def of midpt If Y is the midpoint of \overline{GM} , then $GY = YM$.6. def of suppl. If $\angle EYM$ and $\angle MYT$ are supplementary, then $m\angle EYM + m\angle MYT = 180$.7. A.A.P $m\angle RYE + m\angle EYO = m\angle RYO$ 8. def of Lin Pair Look at the picture, $\angle GYE$ and $\angle GYT$ are a linear pair.9. Lin. Pair Post If #8 is true, then $\angle GYE$ and $\angle GYT$ are supplementary.10. def of compl. If $m\angle 1 + m\angle 2 = 90$, then $\angle 1$ and $\angle 2$ are complementary.11. vert. \angle s $\angle 2 \cong \angle 5$ 

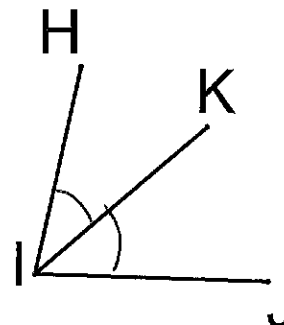
Draw conclusions based on the given information. Then justify your conclusions with a definition, postulate, property, theorem, etc...

12. Given: picture (L lies in the interior of $\angle MON$)
 Conclusion: $m\angle MON = m\angle MOL + m\angle LON$
 Reason: Angle addition postulate

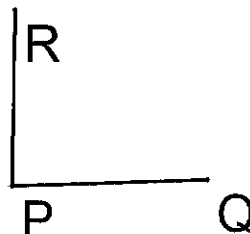


13. Given: $\angle 2$ and $\angle 3$ are complementary; $\angle 5$ and $\angle 3$ are complementary
 Conclusion: $\angle 2 \cong \angle 5$
 Reason: The congruent complements theorem

14. Given: \overline{IK} bisects $\angle HIJ$
 Conclusion: $\angle HIK \cong \angle KIJ$
 Reason: def of \angle bisector



15. Given: $\overline{RP} \perp \overline{PQ}$
 Conclusion: $\angle RPQ$ is a right \angle
 Reason: Definition of perpendicular lines



16. Given: $\angle 1$ and $\angle 3$ are supplementary; $\angle 2$ and $\angle 3$ are supplementary
 Conclusion: $\angle 1 \cong \angle 2$
 Reason: The congruent supplements theorem

17. Given: $\angle B$ is a right angle
 Conclusion: $m\angle B = 90$
 Reason: Definition of a right angle

18. Given: M is the midpoint of \overline{AB} .
 Conclusion: $AM \cong MB$
 Reason: def of midpoint

19. Given: PICTURE
 Conclusion: $\angle 1 \cong \angle 2$
 Reason: Vertical angles are congruent

20. Given: $\angle 1$ and $\angle 2$ are complementary; $\angle 4$ and $\angle 3$ are complementary; $\angle 1 \cong \angle 4$
 Conclusion: $\angle 2 \cong \angle 3$
 Reason: The congruent complements theorem

21. Given: \overline{BC} bisects $\angle ABD$
 Conclusion: $\angle ABC \cong \angle CBD$
 Reason: def of \angle bisector

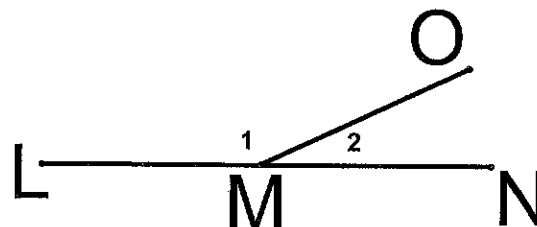
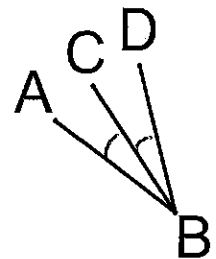
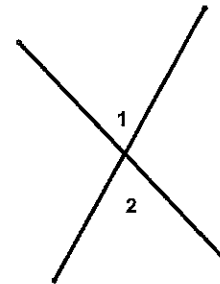
22. Given: picture
 Conclusion: $EF + FG = EG$
 Reason: Segment addition postulate

23. Given: $\angle 1$ and $\angle 2$ are supplementary; $\angle 7$ and $\angle 8$ are supplementary; $\angle 1 \cong \angle 7$
 Conclusion: $\angle 2 \cong \angle 8$
 Reason: The congruent supplements theorem

25. a. Given: picture
 Conclusion: $\angle 1 + \angle 2$ are a lin pair
 Reason: The definition of a linear pair

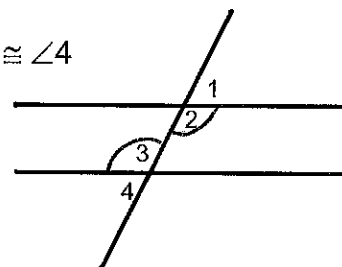
- b. Conclusion: $\angle 1 + \angle 2$ are suppl
 Reason: The linear pair postulate

- c. Concl: $m\angle 1 + m\angle 2 = 180$
 Reason: def of suppl.

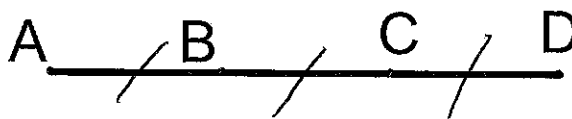


Proofs

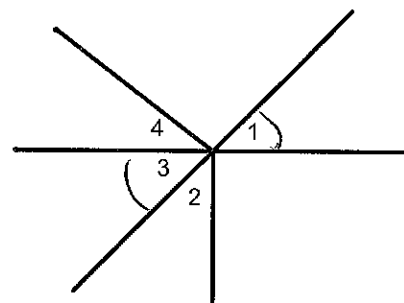
1. Statements	Reasons
① $m\angle 2 = m\angle 3$	① Given
② $\angle 1 + \angle 2$ are Lin. P. $\angle 4 + \angle 3$ are Lin. P.	② def of Lin. P.
③ $\angle 1 + \angle 2$ are suppl. $\angle 4 + \angle 3$ are suppl.	③ Lin. Pair Post.
④ $\angle 1 \cong \angle 4$	④ \cong suppl. \angle s

Given: $m\angle 2 = m\angle 3$ Prove: $\angle 1 \cong \angle 4$ 

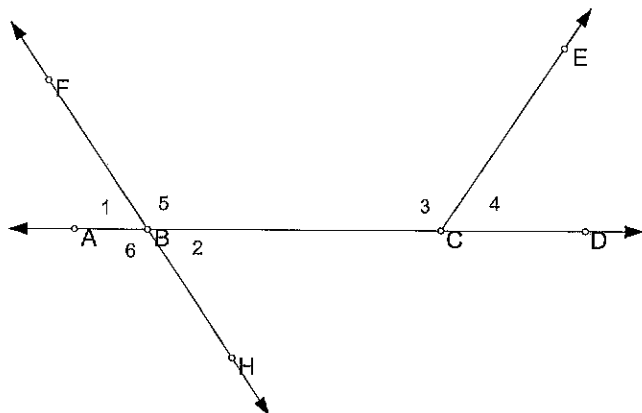
2. Statements	Reasons
①	① Given
② $AB = BC$ $BC = CD$	② def of midpt
③ $AB = CD$	③ Transitive

Given: B is the midpoint of \overline{AC}
C is the midpoint of \overline{BD} Prove: $AB = CD$ 

3. Statements	Reasons
①	① Given
② $\angle 1 \cong \angle 3$	② Vert \angle s \cong
③ $\angle 2 \cong \angle 4$	③ \cong compl. \angle s

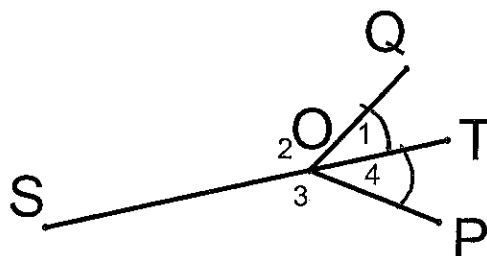
Given: $\angle 1$ and $\angle 4$ are complementary
 $\angle 2$ and $\angle 3$ are complementaryProve: $\angle 2 \cong \angle 4$ 

4. Given: $\angle 2$ and $\angle 3$ are supplementary
Prove: $\angle 1 \cong \angle 4$



Statements	Reasons
①	① Given
② $\angle 3 + \angle 4$ are Lin P.	② def of Lin Pair
③ $\angle 3 + \angle 4$ are suppl.	③ Linear Pair Post
④ $\angle 4 \cong \angle 2$	④ \cong suppl. thm
⑤ $\angle 2 \cong \angle 1$	⑤ Vertical \angle s \cong
⑥ $\angle 4 \cong \angle 1$	⑥ Transitive
⑦ $\angle 1 \cong \angle 4$	⑦ Symmetric

5. Given: \overline{OT} bisects $\angle QOP$
Prove: $\angle 3 \cong \angle 2$



Statements	Reasons
①	① Given
② $\angle 1 \cong \angle 4$	② def of \angle Bis
③ $\angle 1 + \angle 2$ are a Lin P $\angle 4 + \angle 3$ are a Lin P	③ def of Lin P
④ $\angle 1 + \angle 2$ are suppl. $\angle 4 + \angle 3$ are suppl.	④ Linear Pair Post.
⑤ $\angle 3 \cong \angle 2$	⑤ \cong suppl. thm